Landsat 7
Processing System (LPS)
User's Guide

October 20, 1995

GODDARD SPACE FLIGHT CENTER
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SECTION 1 - INTRODUCTION

1.1 Purpose

This document provides the Landsat 7 Processing System (LPS) user with an understanding of the LPS system and how to operate it. ...

1.2 Organization

This document is divided into 5 sections. Section 1 is an introduction to this document. Section 2 is an overview of the hardware and software systems and the systems interfaces. Section 3 describes how to use the user interface (UI). Section 4 deals with operating the Landsat 7 Processing System. Section 5 explains system maintenance as it pertains to the database and file maintenance.

The LPS windowing system is based on the Oracle Forms and the UNIX operating system. The user must be familiar with these disciplines to effectively operate the LPS system. Also, a knowledge in the use of the Oracle database is helpful.

1.3 Related Documents

Other documents applicable to the LPS system are as follows:

TBD.

SECTION 2 - SYSTEM OVERVIEW

This section provides an overview of LPS from an operational perspective. It introduces the operational environment of LPS , the products and services that the system offers to mission users...
...

2.1 Purpose

....

2.2 Functions

2.2.1 General

There are several basic functions which LPS performs to accomplish its purpose. LPS receives the return link wideband data from LGS on a Landsat 7 contact period basis. LPS moves the raw wideband data to removable media on an LPS string basis for each Landsat 7 contact period. Upon receipt of a reprocessing request, the LPS retrieves the removable media, recorded with requested ETM+ wideband data, from the LPS short-term storage.

LPS generates Level 0R, browse image, and metadata files. The LPS also provides a moving window display capability for monitoring the quality of the received ETM+ data while it is being Level 0R processed at each LPS string.

LPS has a direct interface with LP DAAC to exchange data transfer coordination messages and to transfer LPS files on a contact basis.

LPS consists of a total of five logically independent processing strings. Four strings are used to support normal operations while the fifth string is the back-up, test, development, and training string.

2.2.2 User Interface

The LPS User Interface (UI) is the primary interface between LPS subsystems and the LPS operator. The interface uses Oracle Forms and UNIX shell commands, and runs on many graphical user interface devices to provide a menu-driven window environment for the operation and management of LPS.

All functions available in the User Interface are invoked by selecting menu items. All logic for retrieving information and controlling user's input is incorporated in Oracle Forms event triggers. The user controls events by invoking the Oracle Forms functions.

2.2.3 Configuration

TBD.

2.2.4 Data Capture

LPS receives raw wideband data from the LGS on an LGS output channel to an LPS string basis. The LPS stores all wideband data, as it is being received in the LPS raw wideband data store. The LPS continually monitors its wideband data receipt operations on an LPS string basis.

LPS raw data capture is normally performed automatically based on the contact schedule input by the LPS operator. Each string automatically captures the LGS output channel to which it is configured. The raw wideband data is then archived to removable media, short-term storage for reprocessing requests.

2.2.5 Data Processing

LPS retrieves wideband data from the wideband data store and performs CCSDS Advanced Orbiting Systems Grade-3 service on the received Channel Access Data Units (CADUs).

Initiation of Level 0R processing of raw wideband data on each LPS string that stores data for the contact period is done by the operator. The operator generates quality and accounting reports to verify Level 0R processing quality.

2.2.6 File Management

Level 0R files along with Browse files and Metadata files are generated for each subinterval. Transfer of these files is accomplished by the LP DAAC following receipt of notification of LP DAAC's availability.

2.2.7 Restaging of Raw Wideband Data

When a reprocessing request is received, the LPS operator initiates reprocessing for each contact period requested, available in short-term storage. Raw wideband data is restaged to available LPS strings. Thereafter, the processing is identical to newly captured raw wideband data.

2.2.8 Report Generation

The LPS collects return link quality and accounting information when it processes data on a Landsat 7 contact period basis. The LPS also generates summary reports on the amount of Landsat 7 data received, processed and delivered to LP DAAC on a Landsat 7 contact period, and on a daily basis. These summary reports can be displayed and/or printed upon LPS operator request.

2.2.9 Training and Testing

Operational training and test support is provided by the backup LPS string and test console with DAN transmission capabilities disabled. Test data output by the LGS may be used to support training in data capture and Level 0R processing procedures. Backup copies of LPS database contents from active strings may be used to populate a training/test database.

2.3 System Interfaces

2.3.1 General

LPS interfaces to LGS on an LPS string to LGS output channel basis. Each LPS string is responsible for receiving the Landsat 7 data from its associated LGS output channel.

The LPS/LP DAAC interface is automated and electronic. There is a direct, electronic connection between the LPS and the LP DAAC over which automatic data transfer coordination occurs. The LP DAAC is responsible for determining the success of LPS output file transfers.

2.3.2 Inputs

LPS accepts a raw data bit stream for a single LGS channel from the LGS and outputs the stream as a byte stream data set (Raw_WB_Data) to the Raw Wide Band Data data store. The byte stream data set is later extracted and processed to generate output files.

2.3.3 Outputs

LPS processing of raw wideband data generates several types of output files which are transferred to the LP DAAC.

Level 0R Files:

Level 0R Instrument Data File - This file contains the image data from a single band in a single subinterval.

Calibration File - This file contains all of the calibration data received on a major frame basis for a given subinterval.

Mirror Scan Correction - This file contains the Scan Line Data extracted from the two minor frames following the End of Line Code in each major frame of the subinterval.

Payload Correction Data(PCD) - This file contains the PCD

major frames received during a subinterval on a full PCD cycle basis.

Browse Image Files:

This is a reduced data volume file of the Level 0R data which can be viewed. This file contains reduced resolution scenes of the full resolution scene data contained in the Level 0R instrument data files of a subinterval.

Monochrome Browse - This file contains the browse image data for a single band.

Multiband Browse - This file contains the browse image data from three predefined bands of the ETM+ Format 1 scene data.

Metadata Files:

The metadata file contains information on the Level 0R data provided in the subinterval, and the names of the Level 0R instrument data, calibration data, PCD, MSCD and browse image files associated with the subinterval. Metadata also contains quality and accounting information on the return link wideband data used in generating the Level 0R file(s) and received and processed PCD, and cloud cover assessment for the Worldwide Reference System (WRS) scene contained in the subinterval.

SECTION 3 - BECOMING ACQUAINTED WITH THE USER INTERFACE

3.1 General

The User Interface created using Oracle Forms allow the operator to enter, query, update and delete data.

3.2 User Interface Structure

3.2.1 Oracle Forms

The Oracle Forms application includes windows, text items, check boxes and lists of values. Each type of object has a unique set of properties that define its appearance and functionality. A form can include a variety of interface controls, called items. Items are the interface objects that display information and allow interaction with the application.

Following is a description of the various areas in an Oracle Form.

Title: The title is the topmost part of the form and contains the form title.

Menu Bar: The menu bar is below the title area. It contains options that when selected display submenus (pulldown menus) of functions used to perform specific actions on the data in the form. (Refer to Section 3.2.1.2 for a description of the menu bar options.)

Data Fields: The data fields area is below the menu bar area. It contains the various data fields where the data are displayed. The possible data field types used to display the data are:

Text item - This field displays textual data.

Radio button - This field contains a group of buttons where only one button can be selected.

Check box - This field allows a user to indicate an ON or OFF stage by checking or unchecking the box.

Push button - This field allows a user to initiate a predefined action by clicking on the button with the mouse.

Scroll bar - This field allows a user to move up or down through the retrieved and displayed records in the form.

Message Line: The message line is near the bottom of the form. It displays a hint or an error message. A hint informs a user of some course of action to take or indicates the status of an action that has been performed. An error message informs a user that an error has occurred.

Status Line: The status line is at the bottom of the form. It may display any of the following:

____Indicates more records precede the current record.

____Indicates more records follow the current record.

Count - Indicates the number of records retrieved by a query. Each time a user displays a record fetched by a query the count increases. After the last record is fetched, an * precedes the "Count" value.

ENTER QUERY - Indicates a user is allowed to specify query conditions.

<LIST> - Indicates a list of values (LOV) exists for the current item.

3.2.1.2 Form Menu Bar

The menu bar provides a list of choices from which a user can select some predefined action. To select an option from the menu bar (only bolded options can be selected), the user clicks on the option with the left mouse button and a submenu appears. The same action is performed to select an item from the submenu. Menu bar functionality is described in Section 3.2.1.

Following is a description of the various functions in the menu bar.

Action Menu

Rollback—Discards any uncommitted (unsaved) changes.

Commit—Writes (saves) all changes made in the form to the database.

Print—Prints the current screen.

Exit—Exits the current form. (If in ENTER QUERY mode, a user must execute or cancel the query before exiting the form.)

The Action submenu of each default menu applies to all of the windows in a multiwindow form.

Edit Menu

Cut—Cuts the selected area of text and stores it in the paste buffer.

Copy—Copies the selected area of text and stores it in the paste buffer.

Paste—Pastes text from the paste buffer at the current cursor position.

Edit—Displays the editor window and allows the user to edit the selected text item.

Block Menu

Previous—Moves the cursor to the first item that can be entered in the previous block, if one exists.

Next—Moves the cursor to the first item that can be entered in the next block, if one exists.

Clear—Clears all records from the current block and creates a new record. This function does not delete the records from the database.

Item Menu

Previous—Moves the cursor to the previously entered item in the current block.

Next—Moves the cursor to the next item that can be entered in the current block.

Clear—Clears the data in the current item.

Duplicate—Copies the item value of the previous record into the new record.

Record Menu

Previous—Moves the cursor to the previous record in the current block.

Next—Moves the cursor to the next record in the current block.

If no more records are found, a new record will be created except when the current record is blank.

Scroll Up—Displays the next record.

Scroll Down—Displays the previous record.

Clear—Clears the data in the current record.

Remove—Marks the current record for deletion and clears the record from the form. The record is not deleted from the database until the next commit.

Insert—Inserts a new record after the current record. The record is not inserted into the database until the next commit.

Duplicate—Copies all the item values from the previous record into the new record. The new record will not be added to the database until the next commit.

Lock—Locks the current record so that another operator cannot change the record while the current operator is updating it.

Query Menu

Enter—Clears the current block and allows a user to enter query criteria.

Execute—Clears the current block, retrieves from the database for the current form the records that match the search criteria, and displays the first record of the query.

Last Criteria—Redisplays the previous user-provided search criteria.

Cancel—Clears any user-provided search criteria and returns to normal mode.

Count Hits—Clears the current block and displays on the message line the number of records that a query would retrieve if executed. If the system is in the ENTER QUERY mode, the current block does not clear.

Fetch Next Set—Retrieves the next set of records into the current block.

Help Menu

Help—Displays a brief help message for the current item.

Keys—Displays the function key assignments in effect.

List—Displays an LOV window, if there is one available for the current item. An LOV provides the user with a list of valid entries for a specific text item. It can be displayed by one of three methods:

1. The user selects List from the Help submenu, which displays the entire LOV.

2. The user enters an invalid entry, which displays the entire LOV.

3. The user enters a wildcard option, which displays a subset of the list. For example, if the user enters %, the entire list is displayed; if the user enters AB%, only the values beginning with AB are displayed.

A selection is made by clicking on the desired item with the mouse (or pressing the DOWN ARROW key until the desired item is highlighted). The selection item is automatically put into the text item by clicking on the OK button (or pressing the RETURN key).

Display Error—Displays in a separate window additional information regarding the current Oracle error. Refer to Table _____ for a description of the error messages.

Debug—Invokes the Runform debugger if the form is running in debug mode.

3.2.1.3 Navigating Within a Form

Once a form is displayed on the screen, a user can navigate to the different items in the form by either of two methods: mouse or keyboard.

- Mouse navigation is accomplished by moving the mouse until the arrow points to the desired item and clicking on the left mouse button. This action places the cursor (input focus) on the item.

- Keyboard navigation is accomplished by pressing predefined function keys, which are described in Table _____ Pressing CTRL-K or selecting Keys from the Help submenu will show the function keys that are used to navigate the forms.

When a form is displayed on the screen, the cursor is placed on the first navigable field in the form. Pressing the TAB key will move the cursor or input focus to the next navigable item in the form. Navigation is circular, so the next navigable item after the last item in the form is the first navigable item in the form.

Function	Key
Accept	CTRL-F7
Clear block	CTRL-b
Clear form	SHIFT-F5
Clear item	CTRL-u
Clear record	CTRL-F5
Count query hits	CTRL-q
Delete backward	BACKSPACE
Down, next record	DOWN ARROW
Duplicate item	CTRL-=
Edit	CTRL-e
Enter query	CTRL-F11
Execute query	ALT-F11
Exit, cancel query	CTRL-F4
Help	CTRL-h
Left	LEFT ARROW
LOV	CTRL-1
Next item	TAB, RETURN
Print	CTRL-p
Right	RIGHT ARROW
Show keys	CTRL-k

Table 3-1 Predefined Function Keys

3.2.1.4 Viewing and Modifying Data

To view and modify the data, a user must retrieve the data from the database by executing a query. A query can retrieve all the data records associated with the form or a selected

portion of the data records. The number of records that can be viewed through the form is determined by the form definition. After the data have been retrieved, a user can then modify the data (i.e., update records, enter new records, or delete records). If a user is entering only new records, retrieving data is not necessary.

Because data are validated after being entered in a form, an error message is displayed on the message line if a validation error occurred. The user must either correct the error before any further processing can occur or clear the record and proceed.

3.2.1.4.1 Retrieving Data (Executing a Query)

To retrieve data from the database into the form, the cursor must be on one of the items in the form. In the case of multiblock forms, the cursor must be on an item in the appropriate block to retrieve data for that block.

Data retrieval is based on an order (alphabetic or numeric) defined by the form. A query must be executed if a user wants to update or delete data.

Selection criteria are required if a user wants to retrieve only a portion of the data. Selection criteria can be based on the following:

- Exact values
- Patterns
- Variable conditions

To use a match pattern in the selection criteria, the user types the pattern in the text field using an underscore (_) to represent any character and a percent sign (%) to represent any combination of characters. For example, if the pattern typed in the text field is _IN%S, possible matches include BINS, FINES, WINNERS, and WINEMAKERS.

To use a variable condition in the selection criteria, the following relational operators are available:

Operator	Description	Example
!=	Not equal to	!= 19.5
>	Greater than	> 100.00

>=	Greater than or equal to	>= 2000
<	Less than	< DAVIS
<=	Less than or equal to	<= 5
BETWEEN	Between two values	#BETWEEN 100 and 110

NOTE: Relational operators do not work with time values. A relational operator that is a word, such as BETWEEN, must be preceded by a #.

The following steps show how to retrieve all the data associated with a form:

1. Bring up the desired form by clicking on the appropriate edit function button.

2. Place cursor on item in master block form.

3. Select Execute from the Query submenu (or press the EXECUTE QUERY key).

The following steps show how to retrieve a selected portion of the data associated with a form:

1. Bring up the desired form by clicking on the appropriate edit function button.

2. Select Enter from the Query submenu (or press the ENTER QUERY key).

3. Navigate to the specific item(s) that will be used for the selection criteria of the query. Any combination of items can be used for the selection criteria.

4. Enter the selection criteria in the item field. For example, to retrieve all names beginning with the letter “P”, type “P%” in the appropriate item field.

5. Select Execute from the Query submenu (or press the EXECUTE QUERY key). All the data that meet the selection criteria are fetched.

To exit from the ENTER QUERY mode to the normal mode, a user

must either

1. Execute the query with at least one record being retrieved, or

2. Select Cancel from the Query submenu (or press the EXIT key).

3.2.1.4.2 Updating Data

This function is used when queried data are to be changed. Once the data have been retrieved, a user can navigate to the item that is to be changed. To update data,

1. Bring up the desired form by clicking on the appropriate edit function button.

2. Fetch the data by executing a query.

3. Navigate to the item that is to be changed (either click on the item with the mouse or use the TAB key).

4. If the item is a text item, delete the old value by pressing the BACKSPACE key until all the characters are gone, enter the new value, and press the RETURN key to accept the new value. If an error occurs while performing this action, the appropriate error message is displayed on the message line.

5. If the item is a check box, click on the box. The check box is depressed for the ON state; it is raised for the OFF state.

6. If the item is a radio button, click on the desired button. The radio button is depressed indicating that it is selected.

7. To save the changes, select Commit from the Action submenu. To ignore the changes, select Rollback from the Action submenu.

3.2.1.4.3 Deleting Data

This function is used when queried data are to be removed

from the database. To delete data,

1. Bring up the desired form by clicking on the appropriate edit function button.

2. Fetch the data by executing a query.

3. If multiple records are displayed in the form, navigate to the record that is to be deleted.

4. Select Remove from the Record submenu (or press the DELETE RECORD key). This will clear the record from the form; however, the record is only marked for deletion and will be deleted from the database only when a commit is executed.

5. To save the changes, select Commit from the Action submenu. To ignore the changes, select Rollback from the Action submenu.

3.2.1.4.4 Adding New Data

This function is used when new data are to be added to the database. To add data,

1. Bring up the desired form by clicking on the appropriate edit function button.

2. Enter the new data in the text items, check or uncheck the check boxes, and set the desired radio button.

3. If more than one record is to be created, press the DOWN ARROW key to get the next empty record.

4. To save the changes, select Commit from the Action submenu. To ignore the changes, select Rollback from the Action submenu.

3.2.1.4.5 Saving (Committing) Changes

Modifications made to the data through the form interfaces are not saved into the database until a commit has been performed. This is done by selecting Commit from the Action

submenu (or pressing the ACCEPT key). It is advisable to commit frequently when creating or updating records. When a commit succeeds, a message indicating that the transaction was completed appears on the message line.

If any changes have not been committed before the user exits the form, an alert window appears, prompting the user to commit the changes.

If changes are made to more than one record or block in a form, the data are temporarily saved to the database, and a message indicating that the changes have been posted appears on the message line. These posted changes can be rolled back (i.e., the changes can be discarded as long as a commit has not been performed on these changes).

Validation is initiated when a commit has been executed. If validation fails (due to invalid data in the form), an appropriate error message appears on the message line. Refer to Table _____ for a description of the error messages. If a commit fails because a record cannot be updated, inserted, or deleted, the user can select Display error from the Help submenu to view additional information regarding the error (refer to Table _____ for an explanation of the error messages). The user must either correct the data and issue another commit, or roll back the changes (i.e., discard any changes).

The valid check box is a non-navigable item in the forms. It indicates whether the displayed record is valid (i.e., passed validation). If the valid check box indicates that the record is invalid (check box is unchecked) and the user corrects the data so that the record passes validation when committed, the valid check box will not change to indicate that the record is valid until the user requeries the data.

3.2.1.4.6 Ignoring (Rolling Back) Changes

To discard any modifications made to the data since the last commit, the user selects Rollback from the Action submenu (or presses the CLEAR FORM key).

3.2.1.4.7 Locking Data

The lock check boxes lock any data that the user does not want overwritten when a merge load is performed. An explanation of the lock check boxes is given in each form description.

3.2.1.4.8 Exiting From Forms

After all editing functions have been finished, a user can exit from a form by selecting Exit from the Action submenu (or pressing the EXIT key).

SECTION 4 - PROCESSING SYSTEM

4.1 General

The LPS operator brings an LPS string up with the delivered configuration and script files, which includes starting up the Oracle DBMS, starting up the LPS User Interface. The LPS operator updates the string configuration, updates the contact schedule according to the received contact schedule from LGS, updates parameters and thresholds.

4.2 Operational Functions

4.2.1 Configuration Parameters and Thresholds

The operator can view, insert or update threshold and parameter values for result reporting and error reporting. The LPS software sends messages only when the specified threshold has been exceeded for each type of message.

Threshold and parameter values cannot be updated during processing activity.

4.2.2 Daily Operations

The LPS operational scenarios represent sequences of activities performed by operations personnel as they relate to the LPS software.

4.2.2.1 System Setup Activities

Following is the system set up activities involved in LPS initialization and configuration.

- Start up LPS strings
- Receive the contact schedule from the LGS
- Set up LPS strings for data capture
- Receive parameters from the IAS
- Adjust LPS Level 0R parameters and thresholds

4.2.2.2 Normal Operations

This is a list of activities performed routinely to accomplish Landsat 7 data processing within the LPS

- Automatically receive data from the LGS
- Process data to Level 0R
- Transfer files to the LP DAAC
- Monitor LPS-LP DAAC file transfers
- Support operational training and test

4.2.3 Contingency Operations

The following are contingency operations performed in response to abnormal conditions.

- Receive data from LGS for manual start of data capture with database running
- Receive data from LGS for manual start of data capture with database not in operation
- Restage data for reprocessing when requested
- Manual override of LPS functions (manually stop process)
- Resend DAN in response to initial failure to send DAN
- Respond to failure in LGS-to-LPS interface
- Respond to failure in LPS-to-LP DAAC interface
- Respond to exhaustion of LPS output storage capacity
- Respond to LPS string failure
- Restore LPS string

4.3 LPS STARTUP

4.3.1 From A Completely Powered Off State

The LPS operator brings an LPS string up by following these steps:

- Power on/boot operations interface workstation
- Log onto operations interface workstation
- Start up Oracle DBMS on LPS string
- Telnet/rlogin from operations interface workstation to LPS string
- Start up LPS User Interface

4.3.2 Configuring LPS

4.3.2.1 Environment

Select **SETUP** from the FORM MENU BAR

Select **LPS String Configuration** from the pull-down menu

This menu allows the operator to view, insert, update or delete string configuration items.

Consists of:

LPS_Hardware_String_Id
LGS_Channel_Id
Spacecraft_Id
Instrument_Id
LPS_Software_Version_Number

****LPS Configuration items cannot be updated during processing activity.**

Details TBD.

4.3.2.2 Parameters

Select **SETUP** from the FORM MENU BAR

Select **DATA PROCESSING PARAMETERS** from the pull-down menu

This menu allows the oprator to view, insert or updata parmeter values.

Consists of:

- Major Frme Processing (Sensor Alignment)
- Band Alignment
- CCSDS
- Scene Parameters
- WRS Parameters
- PCD Parameters

****Parameter values cannot be updated during processing activity.**

Details TBD.

4.3.2.3 Thresholds

Select **SETUP** from the FORM MENU BAR

Select **DATA PROCESSING THRESHOLDS** from the pull-down menu

This menu allows the operator to view, insert or update threshold values for error reporting. The LPS software sends messages only when the specified threshold has been exceeded for each type of message.

****Threshold values cannot be updated during processing activity.**

Details TBD.

4.3.2.4 Contact Schedules

Select **SETUP** from the FORM MENU BAR

Select **CONTACT SCHEDULES** from the pull-down menu

See Section 3.2.1.2 for information on Forms submenus.

This form allows the operator to view, insert, modify or delete the contact schedules. This menu displays a manual entry from which the operator can enter contact schedule information. The form demands that the scheduled stop time occur after the scheduled start time.

Details TBD.

4.3.3 Monitoring Operations

4.3.3.1 LPS Journal File

Select **MONITOR** from the FORM MENU BAR

Select **Display LPS Journal File** from the pull-down menu

This option allows the operator to select to view the entire Journal file or select a time range from the Journal file.

The current time is displayed as the start and stop time. Enter the start and stop time to select a time range to view. Press the "OK" button to continue.

To prevent this activity, press the "CANCEL" button.

Details TBD.

4.3.3.2 Operation Messages

Select **MONITOR** from the FORM MENU BAR

Select **Display Operation Messages** from the pull-down menu

This option brings up real-time status messages displayed. Additional displays of the System Log can also be brought up. By selecting different priority filter levels for each display, the operator can have displays of all messages in one window and

only critical error messages in the other.

The operator is allowed to resize each display and scroll backward through messages. 1000 lines are being retained.

The String Id is displayed along with the different severity message types.

Select from **FATAL**
ERROR
WARNING
INFORMATION...

Press the “OK” button to continue.

Details TBD.

4.3.4 Data Processing

4.3.4.1 Raw Data Capture With Database Running

Select **CONTROL** from the FORM MENU BAR

Select **START CAPTURE** from the pull-down menu

This option allows the user to initialize the system and begin raw data capture. It is assumed that if raw data capture begins from the User Interface Menu that it is an unscheduled capture since capture starts automatically if it is a scheduled capture.

Note: Raw data capture can be initialized and started from the command line should the database (along with the User Interface) not be running. See Appendix A for instructions on how to manually begin raw data capture.

Start Capture - prompts for:

Stop Time
Group Id
Isolate Flag
Suspend Flag
Capture Filename
Schedule Id
Capture Mode (Unscheduled)

Details TBD.

4.3.4.1.1 Stop Raw Data Capture

Select **CONTROL** from the FORM MENU BAR

Select **STOP CAPTURE** from the pull-down menu

This option allows the operator to stop data capture manually.

Details TBD.

4.3.4.1.2 Archive Raw Data

Select **CONTROL** from the FORM MENU BAR

Select **START COPY TO TAPE** from the pull-down menu

This form allows the operator to start saving the online raw data file and its associated accounting file to removable media for short term storage.

The online contact periods are displayed. Select an entry and enter the removable media device name and then press the "OK" button.

The operator can prevent this activity before the save begins by selecting the "CANCEL" button.

Details TBD.

4.3.4.1.3 Stop Archiving of Raw Data

Select **CONTROL** from the FORM MENU BAR

Select **STOP COPY TO TAPE** from the pull-down menu

This option allows the operator to stop the saving of the online raw data file and its associated accounting file to removable media. If there is no backup activity, a message is displayed informing the operator.

To cancel the stop copy to tape before termination of the save begins, select the “CANCEL” button.

Details TBD.

4.3.4.2 Level 0R Processing

4.3.4.2.1 Start Level 0R Processing

Select **CONTROL** from the FORM MENU BAR

Select **START PROCESSING** from the pull-down menu

This option allows the operator to begin processing Level 0R processes. A list of contact periods available for processing is displayed. Select an entry from the form and press the “OK” button.

To prevent this activity, select the “CANCEL” button.

Details TBD.

4.3.4.2.2 Stop Level 0R Processing

Select **CONTROL** from the FORM MENU BAR

Select **STOP PROCESSING** from the pull-down menu

This option allows the operator to stop the Level 0R processing.

If there is no Level 0R process currently running, a message is displayed indicating there are no Level 0R processes running. Otherwise the Level 0R process currently running is displayed. Press the “OK” button to continue.

To cancel this activity before it begins, select the “CANCEL” button.

Details TBD.

4.3.4.3 Restage Raw Data

4.3.4.3.1 Start Restaging of Raw Data

Select **CONTROL** from the FORM MENU BAR

Select **START COPY FROM TAPE** from the pull-down menu

This option allows the operator to restage the saved raw data file and its associated accounting file from the removable media. The String Id is displayed and the operator is prompted to enter the removable media device where the requested files are located.

To prevent this activity before it begins select the “CANCEL” button.

Details TBD.

4.3.4.3.2 Stop Restage of Raw Data

Select **CONTROL** from the FORM MENU BAR

Select **STOP COPY FROM TAPE** from the pull-down menu

This option allows the operator to stop the restaging of a raw data file and its associated accounting file from removable media. If there is no restaging activity, a message is displayed informing the operator.

To cancel this activity before it begins, select the “CANCEL” button.

Details TBD.

4.3.5 Managing Files

4.3.5.1 Delete Capture Files

Select **FILES** from the FORM MENU BAR

Select **DELETE CAPTURE FILES** from the pull-down menu

This Form window allows the operator to delete a capture file and its associated accounting file from the capture disk. The operator is prompted to enter the raw data filename to be deleted. If the designated file does not exist, a message is displayed and this menu exits.

To prevent this activity, select the “CANCEL” button.

Details TBD.

4.3.5.2 Delete L0R Files

Select **FILES** from the FORM MENU BAR

Select **DELETE L0R FILES** from the pull-down menu

This option allows the operator to delete L0R files. A list of files marked for deletion is displayed. The operator selects the file to delete from the menu.

Details TBD.

4.3.5.3 Keep L0R Files

Select **FILES** from the FORM MENU BAR

Select **RETAIN L0R FILES** from the pull-down menu

This option allows the operator to retain L0R files.... **(???marked for retention-deletion???)** A list of files marked for retention is displayed. The operator selects the file to retain from the menu.

Details TBD.

4.3.5.4 Enable/Disable File Transfer

Select **FILES** from the FORM MENU BAR

Select **ENABLE/DISABLE** from the pull-down menu

...

To prevent this activity, select the "CANCEL" button.

Details TBD.

4.3.5.5 Resending a DAN

Select **FILES** from the FORM MENU BAR

Select **RESEND DAN** from the pull-down menu

This allows the operator to resend the DAN(s). A list of contact periods is displayed. The operator selects the contact(s) requested to resend a DAN.

Details TBD.

4.3.6 Report Generation

4.3.6.1 Reporting Data Receive Summary

Select **REPORTS** from the FORM MENU BAR

Select **DATA RECEIVE SUMMARY** from the pull-down menu

This option generates the Data Receive Summary Report and allows the operator to select screen display of report or printed hard copy of report.

To prevent this activity, select the “CANCEL” button.

Details TBD.

4.3.6.2 Reporting Return Link Quality

Select **REPORTS** from the FORM MENU BAR

Select **RETURN LINK QA** from the pull-down menu

Details TBD.

4.3.6.3 Reporting Level 0R Quality and Accounting

Select **REPORTS** from the FORM MENU BAR

Select **LEVEL 0R QA** from the pull-down menu

This form allows the user to generate the Level 0R quality and accounting report for a specified contact period. A list of contact periods processed is displayed. Select an entry from the Form and press the "OK" button.

To prevent this activity, select the “CANCEL” button.

Details TBD.

4.3.6.4 Reporting File Transfer Summary

Select **REPORTS** from the FORM MENU BAR

Select **FILE TRANSFER SUMMARY** from the pull-down menu

This Form allows the user to generate the file transfer summary report for a specified time range. The operator is prompted for the start and stop time. After the report is generated, the user can select to display the report on the screen or to output the report to a printer for a hard copy.

To prevent this activity, select the “CANCEL” button.

Details TBD.

4.3.7 Testing Raw Data Capture

Select **TEST** from the FORM MENU BAR

Select **RAW DATA CAPTURE** from the pull-down menu

This menu allows the operator to enter a data filename used to write data to the capture device. Testing raw data capture is accomplished using another string to capture the raw data.

Details TBD.

4.3.8 Exiting the System

Select **SHUTDOWN** from the FORM MENU BAR

SECTION 5 - SYSTEM MAINTENANCE

5.1 Test

5.1.1 Testing Raw Data Capture

APPENDIX A: Manual Processing Without the User Interface

A.1 Raw Data Capture

A.1.1 Start Raw Data Capture

Raw data capture can be activated from the UNIX command line should the database not be running where there is no User Interface. To begin capture from the command line, rdc_Main is invoked followed by the options.

rdc_Main [-s Stop Time] [-i Isolate Flag] [-p Suspend Flag] [-g Group Id] [-d Schedule Id]

Details TBD.

A.1.2 Stop Raw Data Capture

To manually stop raw data capture when the database is not running, invoke the rdc_ShutdownRDC program to manually terminate the raw data capture from the UNIX command line.

rdc_ShutDownRDC [No options]

Details TBD.

A.1.3 Archiving The Raw Data File

To save the capture file to removable media without the User

Interface, invoke the rdc_Save program from the UNIX command line.

rdc_Save [-d Device]

Details TBD.

A.1.4 Stop Archiving The Raw Data File

To stop the saving of the raw data file to removable media without the User Interface, invoke the rdc_StopSaveRestage program from the UNIX command line.

rdc_StopSaveRestage [a- Save or Restage]

Details TBD.

A.1.5 Restore Database after Non-Database Capture

Following a capture from the UNIX command line when the database is not functioning, data receive summary information is not inserted into the LPS database. When the database is functioning again, the LPS operator must move the data receive summary information from the files in which it has been stored by selecting the Form for updating the database for this purpose.

Select **TBD** from the FORM MENU BAR

Select **TBD** from the pull-down menu

The "Restore Database" Form entry searches for all the capture accounting information files in the reserved directory and updates the database with the information. This function is successful only if all the files successfully update the database. The program returns a failure if any of the files do not successfully update the database.

Details TBD.